Developing an Effective Tool for Teaching Teens About Workplace Safety

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ABSTRACT

Paid employment is an important feature of adolescent life. Too often, it has negative health consequences, including more than 200,000 workplace injuries to 14 to 17 year olds every year. Training teens about occupational safety is part of an overall strategy to address this problem. When the project described in this article began, there were few curricula for teaching teens basic occupational safety information, and there was little research on the most effective way to deliver this information. Project staff sought to fill these gaps in resources and knowledge. They conducted formative research to determine teen knowledge and attitudes about workplace safety and about child labor laws, teens' comfort with voicing concerns at work, and the type of training they received. Staff also interviewed educators and pilot-tested a draft curriculum to determine format and content appropriate to trainers' time constraints and levels of knowledge. In response to the findings, project staff developed curricula with activities addressing hazards in workplaces, prevention strategies, child labor laws, and how to communicate effectively about workplace concerns. Activities were created to be interactive and fun, and instructor guidance was presented concisely but with sufficient background information for someone with limited knowledge of occupational health and safety.

BACKGROUND

Paid employment is an important feature of adolescent life in the United States. An estimated 80 percent of youth work at some point during their high school years (Light, 1995; Steinberg & Cauffman, 1995). The most common workplaces for teens are retail settings (particularly restaurants and grocery stores), followed by service jobs (particularly entertainment and recreation), and agriculture (U.S. Bureau of Labor Statistics [BLS], 1996). Many teens spend nearly as much time at work as at school, and spend more time at work than doing sports and other after-school activities. Yet the consequences of work for young peoples' health and well-being has been studied inadequately (Committee on the Health and Safety Implications of Child Labor, 1998).

Employment provides many obvious benefits to teens: a sense of responsibility and accomplishment, money, and training for a future career. But it can have negative consequences as well. Despite the existence of child labor laws that regulate the number of hours teens may work and the types of jobs and tasks they may do, teen workers are injured at a higher rate than their adult counterparts in similar jobs (Castillo, Davis, & Wegman, 1999). More than 200,000 14 to 17 year olds are injured at work every year; an estimated 100,000 are injured seriously enough to seek treatment in hospital emergency departments (Castillo et al., 1999). Nearly 20 percent of injured teens are hurt while doing tasks prohibited by child labor laws (Knight, Castillo, & Layne, 1995). An average of 70 teens are killed on the job each year (Castillo et al., 1999). In addition, working more than 20 hours per school week is associated with a decrease in school performance and an increase in substance abuse (Committee on the Health and Safety, 1998, p. 115; Bureau of Labor Statistics [BLS], 2001).

Young workers are injured on the job for a variety of reasons. These include inexperience on the job (Castillo et al., 1999), use of unsafe equipment (Committee on the Health and Safety, 1998, p.86), eagerness to

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please when asked to do hazardous tasks that may be illegal (Massachusetts Department of Health [MDPH], 1997; MDPH, 1998), lack of awareness and/or compliance with the child labor laws (Committee on the Health and Safety, 1998, p. 88), developmental characteristics that make them more vulnerable to injury (Committee on the Health and Safety, 1998, p.89), and inability to voice concerns about safety (Zakocs, Runyan, Schulman, Dunn, & Evensen, 1998). Inadequate training also leads to injuries. Several studies have found that approximately half of young workers receive no safety training on the job (Committee on the Health and Safety, 1998, p.87). The Institute of Medicine report *Protecting Youth at Work* recommends "information and training to reduce the risks and enhance the benefits associated with youth employment." (Committee on the Health and Safety, 1998, p.222) Although employers have the primary responsibility for providing health and safety training to their workers—including those who are under 18—other adults (e.g., parents, educators, health care providers, and job placement professionals) also have a role to play.

As part of an overall strategy to protect the safety of teens at work, the National Institute for Occupational Safety and Health (NIOSH) funded three projects from 1996 to 1998 to develop and implement community-based educational strategies to promote the safety of young workers ages 14 to 17. The three projects were located at the Massachusetts Department of Health and Education Development Center Inc.; the University of California at Los Angeles, Labor Occupational Safety and Health Program; and the University of California at Berkeley, Labor Occupational Health Program. These projects were selected due to high injury rates among teen workers and existing collaborative relationships between schools and community-based job training and youth serving organizations. Nationally, few educational resources existed, no generic occupational safety and health curricula for teens had been identified, and schools and community programs had few models for integrating young-worker safety education into their ongoing activities. Therefore, the goals of each program were (1) to develop materials and activities to increase the knowledge of teens, parents, and employers about safety risks in the workplace and (2) to stimulate community organizations to modify existing practices and programs to include teen-worker safety issues. The three projects developed many activities and materials, as described in *Promoting Safe Work for Young Workers: A Community Guide* (National Institute for Occupational Safety and Health, 1999).

This article describes the process undertaken in Brockton and Oakland to develop a specific tool: a short basic curriculum, designed for use in schools and in community-based job training programs, which covers the fundamental occupational safety information youth need. Although each project developed its own curriculum reflecting its own state laws, both curricula cover the same content and use the same approach based on similar, participatory hands-on activities. Because the two curricula are so similar, we describe them here together. Staff of the two projects shared their findings with each other throughout the process.

DEVELOPING THE CURRICULA

Formative Research: Methods

Formative research used in developing the curriculum's content consisted of focus groups with high school students in Brockton, an extensive, written pre-intervention survey of high school students conducted in Brockton and Oakland, and a survey of community job trainers and school-based job educators in California.

Focus groups

A set of seven questions was developed for use with student focus groups. Questions were designed to determine teens' knowledge and attitudes about workplace safety and about child labor laws, students' comfort with voicing concerns at work, and any training they received. Twenty-four juniors and seniors, representing Brockton's diverse student body, were recruited through Brockton High School's School to Work Program. They were separated into five groups, which met during students' free periods. The students' identities were not documented.

Pre-intervention survey

A 60-item, anonymous student survey assessed teens' level of understanding, their underlying attitudes, and their experiences related to workplace hazards, child labor laws, work injuries, and interactions with employers. The survey was developed and analyzed in collaboration with M. Bowling and C. Runyan at the Injury Prevention Research Center, University of North Carolina. Also included were demographic information, the nature of the last job held, training they received, and their major concerns on the job. The survey was designed to be completed in 30 minutes.

In Brockton and Oakland, project staff approached the high school principals to gain permission for classroom teachers to administer the survey during normal school hours. In Brockton, the survey was administered during class to 449 students in grades 9 to 12 in randomly selected English classes. In Oakland, the survey was administered during class to 271 students in grades 9 to 12 in randomly selected social studies classes. In both cities, more classes from grades 11 and 12 were selected, in order to reach larger numbers of students with work experience. Students in both cities were told that the survey was part of a citywide project to develop educational materials on work-related issues. The same survey was administered at both sites. All students present in the selected classes on the day of the survey completed the surveys.

Phone interview of teachers and trainers

A set of 18 open-ended questions was developed for use with work-experience teachers and community-based job trainers in Oakland and other areas of California. Questions were designed to determine typical class sizes, current instruction on health and safety and workplace rights, time available for new material, and type of material most likely to be used. Twenty-five

program contacts were provided by the California Workforce Association, with an emphasis on programs that had at least three years' experience providing youth employment training. Initial contacts were made with all 25 programs; program staff successfully completed 16 interviews.

FORMATIVE RESEARCH: RESULTS

Major focus group findings

Workplace hazards and injury prevention: Safety was *not* mentioned as a concern without researcher prompting. Rather, pay and angry customers were major concerns. If pressed about workplace hazards, students indicated that there was not really much that they could do about prevention, "accidents just happen," and injuries at work are a result of "carelessness" on the part of the employee only.

Child labor laws: Students were aware that some tasks are not allowed by law, but other than restrictions on using meat slicers, they were unclear on what most of the prohibited tasks are. They were also aware that laws restrict the hours teens can work, but were confused about the specific restrictions. Many students provided examples of working later than legally allowed. Most said that it would be helpful to know their rights on the job.

Voicing concerns: Students perceived that they would be seen as undesirable employees and risk losing their jobs if they did not do everything asked of them or if they confronted supervisors about unsafe conditions.

Training: Few students reported receiving training on safety issues. Those who did receive training worked in supermarkets, office supply stores, and private businesses. Overwhelmingly, the students desired hands-on safety training as opposed to training provided by a book or video.

Key pre-intervention survey results

Because many questions concerned students' job-related experiences, the answers given by students with current and past work experience were examined separately from those given by students with no work experience. Table 1 reflects responses from students with work experience (303 students in Brockton and 188 in Oakland).

KEY PHONE INTERVIEW RESULTS

- Work experience and job training programs provide between 15 minutes and one hour on health and safety instruction, with a focus on safety rules. Few teach anything about workplace rights.
- Training programs would be most likely to use a one to two hour module on workplace rights and health and safety.
- Trainers want short, interesting, participatory training activities.
- Youth employment agencies would also like materials and training ideas for employers (who are the on-site supervisors of the youth participants).

PILOT-TESTING THE CURRICULUM

After themes were selected and critical issues were identified, project teams at the two sites developed four-lesson curricula with interactive hands-on activities that reflected their respective state's child labor laws.

Pilot-Testing: Methods

Project staff pilot tested the three to four hour curricula to determine whether teachers without occupational health and safety knowledge were able to teach the material effectively. In Brockton, project staff observed approximately 10 trainers: peer leaders at the Boys and Girls Club, teachers at Brockton High School, and job trainers at the summer job training program. In California, staff observed eight trainers from community and school-based job training and job readiness programs. Staff observed a variety of trainers using the curricula to assess whether trainers followed the written guidelines, provided correct information to students, and completed activities in the suggested amount of time. Students were observed to determine whether they participated in the activities as recommended. Staff used a checklist during observations and interviewed trainers and students at the end of the trainings.

Pilot-Testing: Results

Trainers followed the guidelines in the curricula, but often took more time than project staff anticipated. Trainers generally provided correct information and reported that they were comfortable teaching the workshop, although they had questions about hazards in specific workplaces and details of child labor laws. Staff observed, and trainers confirmed, that trainers found two activities difficult to explain adequately to students: a prevention strategies game and a role play designed to give students practice in voicing concerns about workplace safety. Students actively engaged in all activities and discussions.

CONTENT AND FORMAT OF THE FINAL CURRICULA

Project staff used the focus group and survey results, as well as the trainer interviews and pilot-testing, to create the final curricula, *Safe Work/Safe Workers* (the Massachusetts version) and *Work Safe!* (the California version). The final curricula contain information and skill-building exercises that address the key issues identified as placing teens at risk on the job, about which many teens were unclear or unaware. Key components of both curricula include:

- a video and hazard-mapping activity to learn about workplace hazards
- a prevention game or activity to teach the many ways hazards can be mitigated or removed
- a bingo or Jeopardy-style game to teach teens about child labor laws and health and safety rights on the job
- a role-play activity to practice speaking up effectively about workplace concerns
- resources for additional assistance

The curricula use hands-on and interactive activities. The guidelines for trainers provide the background information trainers wanted and clear instructions for all activities.

DISCUSSION

Adolescent workers are at particular risk of injury. Previous research indicated that

most teens receive inadequate occupational health and safety training both on the job and elsewhere. A review of current resources revealed a lack of available educational materials for youth on basic workplace safety. Before writing curricula that could be used in schools and community settings, project staff in two states conducted focus groups and surveys to determine teens' knowledge of and attitudes about occupational health and safety. They learned that teens were unaware of workplace hazards and felt that "being careful" was an adequate safety measure. Yet teens reported doing a number of hazardous activities at work. They had an awareness of child labor laws, but did not know several important restrictions on hours and hazardous tasks, and reported working later than allowed by child labor laws. Most teens did not receive training on all relevant safety topics. Many did not voice concerns at work about unsafe conditions.

Research results were used to develop activities to raise teens' awareness that hazards exist in all workplaces and to provide information about a variety of ways to mitigate these risks of injury. Other activities provided information and resources on key child labor laws, and practice in communicating effectively about workplace concerns.

Staff conducted interviews with teachers and job trainers and pilot-tested the draft curricula to ensure (1) that the format and content were appropriate for trainers' time constraints and levels of knowledge and (2) that the curricula could be integrated into key work-related classes and programs. In response to teacher and trainer input before and after curriculum development, activities were created to be interactive and fun, and the instructor guidance was presented concisely but with sufficient background information for someone with limited knowledge of occupational health and safety.

It should be noted that generalizing the results of the formative research is limited by the facts that research was conducted in two communities only, and because the youth and teachers interviewed and surveyed were not necessarily representative of these populations in general.

Subsequent evaluations of the curricula—including pre- and post-tests and one quasi-experimental evaluation project—indicated that the curricula increase student knowledge and awareness of key health and safety issues (Bush, Dewey, & Miara, 2002). An expanded outcome evaluation is the next step planned by project staff.

Since 2001, the OSHA-funded National Young Worker Safety Resource Center has adapted the curricula for use in six states (in addition to Massachusetts and California) and trains instructors in its use. The curricula are used in a variety of school and community settings where health educators work: health education classes, vocational education classes, job training programs, peer leadership programs, school-to-career programs, and school-and community-based health centers.

School and community-based training does not replace the on-the-job safety training that is the responsibility of employers. However, it is an important complement, providing generic, transferable knowledge and skills, and practice in voicing concerns in a safe environment. Health educators who address adolescent health issues are ideally suited to include occupational safety in their existing programs. The curricula described in this article provide messages consistent with strategies used to address other health risks: know your rights, understand hazards and how to prevent them, take responsibility for your health and safety, and know how to speak up.

Health educators can play a significant

Table 1. Percentage of Students Responding "Yes" to Selected Questions

Self-reports	Brockton n=303	Oakland n=188
The main things you worry about at your job:		
▪ angry customers	38	25
▪ not getting paid enough	33	27
▪ getting hurt	12	15
Do you agree: If I pay attention, I won't get hurt?	66	64
Do you agree: Teen jobs are pretty safe?	43	39
At your job, do you ever:		
▪ use a case cutter?	47	35
▪ use a food slicer?	19	22
▪ use gasoline or cleaning solutions?	50	36
Do you ever work later than allowed under child labor laws (14 and 15 year olds only)	50 (n=67)	23 (n=47)
Did you receive training at your job about:		
▪ why and how to use safety equipment?	33	38
▪ what to do if you notice something hazardous?	39	41
Have you ever noticed unsafe equipment at work?	26	19
Have you ever told a supervisor when you noticed unsafe equipment?	56 (n=79)	26 (n=36)

role in ensuring that work is a safe, positive experience for the youth they serve and in ensuring that parents, employers, and school personnel protect the health and safety of young workers.

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